IN THE CLAIMS

Cancel claims 13-17, without prejudice or disclaimer, and add the following claims.

18. A peptide having bifidogenic properties and amino acid sequence

R_1-EQLLRLKK-R_2 (SEQ ID NO: 1), R_1-YLEQLLRLKKY-R_2 (SEQ ID NO: 2),

R_1-NIQRNILR-R_2 (SEQ ID NO: 3), R_1-YMNGMNRQRNILR-R (SEQ ID NO: 4),

R_1-FQWQRNMRK-R_2 (SEQ ID NO: 5), R_1-HTGLRRTA-R_2 (SEQ ID NO: 6),

R_1-FTAIQNLRK-R_2 (SEQ ID NO: 7), R_1-EVAARARVVW-R_2 (SEQ ID NO: 8),

R_1-WQRNMRKV-R_2 (SEQ ID NO: 9), R_1-LARTLKRLK-R_2 (SEQ ID NO: 10),

R_1-YPQKVEKV-R_2 (SEQ ID NO: 11), R_1-LVRYTKKV-R_2 (SEQ ID NO: 12),

R_1-KVLYEIARR-R_2 (SEQ ID NO: 13), R_1-ARRARVVWCAVG-R_2 (SEQ ID NO: 14),
R_3-CIAL-R_4 (SEQ ID NO: 15)

R_1-AIRARVVWCAVGE-R_2 (SEQ ID NO: 16),
R_3-CIAL-R_4 (SEQ ID NO: 15)

R_1-YQRRPAIAINNPYVPRTYYANPAVVRPHAQIPQRQYLPNSHPPTVVRRPNLHPSF-R_2,
(SEQ ID NO: 17)

R_1-GIRRRSVQWCTVSQPEATKCFQWQRNMRRVRGPPVSCIKRDSPIQCIQA-R_2
(SEQ ID NO: 18),

R_1-GIRRRSVQWCAVSQPEATKCFQWQRNMRKVRGPPVSCIKRDSPIQCIQA-R_2,
(SEQ ID NO: 19),

R_1-GIRRRSVQWCAVSQPEATKCFQWQRNMRKVRGPPVSCIKRDSPIQ CIQA-R,
(SEQ ID NO: 20),

R_1-VYQHQKAMPKPWIQPKTKVIPYVRYL-R_2 (SEQ ID NO: 21),
R_1-AFRARVVWAAVG-R_2 (SEQ ID NO: 22),
R_1-CAVGGGCIAL-R_2 (SEQ ID NO: 23), or

R_1-RETRKYWCRQGARGGCITL-R_2 (SEQ ID NO: 24),

wherein

R_1, R_3 independently represents NH_2, an amino acid, or a peptide containing up to 100 amino acids, and

R_2, R_4 independently represents COOH, $CONH_2$, an amino acid, or a peptide containing up to 100 amino acids; or

the peptide N-modified by amidation, acetylation, sulfation, phosphorylation, glycosylation, or oxidation having bifidogenic properties.

19. A peptide having bifidogenic properties and amino acid sequence

SEQ ID NO: 8,

SEQ ID NO: 14,

SEQ ID NO: 15, or

R_1-ARFARVVWCAVG-R_2 (SEQ ID NO: 14)
R_3-CIAL-R_4 (SEQ ID NO: 15).

20. A method comprising obtaining a peptide having bifidogenic properties comprising the steps of:

- adding proteases to cow's milk, or human milk, followed by incubation for two hours;
- centrifugation to remove milk fat;
- acidification to a pH of 2.0 with strong acids;
- removing the precipitated proteins;
- application of at least one reverse phase HPLC step;
- application of a cation-exchange HPLC step;
- collecting fractions;
- adjusting the fractions to a salt content of < 25 mM by dialysis or reverse phase HPLC for performing activity tests;
- culturing *Bifidobacterium bifidum* and *E. coli* in the presence of the fractions and selecting a fraction which meets requirement:

$$\frac{BW}{B0} - \frac{EW}{E0} \geq 0.15 \text{ (bifidogenic)}$$

wherein

i) BW represents the germ count obtained upon 16 hours of incubation of *Bifidobacterium bifidum* in 50% Elliker broth in the presence of the fractions peptides in a concentration of 200 µg/ml;

ii) B0 represents the germ count obtained in the control incubation without active substances;

iii) EW represents the germ count obtained upon 16 hours of incubation of *E. coli* in 3 g/l tryptic soy broth in the presence of the peptides in a concentration of 200 µg/ml;

iv) E0 represents the germ count obtained in the control incubation without active substances; and

– isolation of the peptide having bifidogenic properties from the fraction meeting the requirement.

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21. The method of claim 20, further comprising the step of N-modification of the peptide having bifidogenic properties by amidation, acetylation, sulfation, phosphorylation, glycosylation, or oxidation to obtain the peptide having bifidogenic properties.

22. The peptide having bifidogenic properties obtained by the method of claim 20.

23. The peptide having bifidogenic properties obtained by the method of claim 21.

24. A method of using the peptide of claim 18, comprising orally administering an effective amount of the peptide to an individual to selectively promote growth of bifidobacteria, or selectively inhibit the growth of non-bifidobacteria, in the digestive tract.

25. A method of using the peptide of claim 19, comprising orally administering an effective amount of the peptide to an individual to selectively promote growth of bifidobacteria, or selectively inhibit the growth of non-bifidobacteria, in the digestive tract.

26. A method of using the peptide of claim 22, comprising orally administering an effective amount of the peptide to an individual to selectively promote growth of bifidobacteria, or selectively inhibit the growth of non-bifidobacteria, in the digestive tract.

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27. A method of using the peptide of claim 23, comprising orally administering an effective amount of the peptide to an individual to selectively promote growth of bifidobacteria, or selectively inhibit the growth of non-bifidobacteria, in the digestive tract.

28. A composition for human administration comprising the peptide of claim 18 in combination with a physiologically acceptable excipient in a galenic formulation.

29. A composition for human administration comprising the peptide of claim 19 in combination with a physiologically acceptable excipient in a galenic formulation.